

Remarks

In response to the Office Action of December 9 2004, Applicants hereby request the Examiner to reconsider the claims in view of the following amendment and remarks. Applicants have amended independent claim 1 by the limitation in dependent claim 14. Applicants further cancel claims 11, 12, 14, 18 and 23 without prejudice.

The Examiner has rejected claims 1-25 under 35 U.S.C. 103(a) as being unpatentable over Ford (US 3,756,794) in view of Forsberg (US 4,447,348) and Schwab (US 5,669,938).

The Examiner contends '794 discloses emulsified hydrocarbon fuels suitable for engines. The fuels include diesel, gasoline and kerosene type distillates. The hydrocarbon fuel component forms more than 75% of the total composition and further allows for a wide range of emulsifiers, non-ash forming freezing point depressants. Applicants respectfully traverse.

The '794 patent discloses in column 2, lines 3 to 14 and in all of the Examples (column 2, line 40 to column 3, line 69) the emulsifier is a condensate of an alkylphenol and an alkyleneoxide. In contrast Applicants claimed invention requires an emulsifier comprising an acylating agent as disclosed in claim 1. In addition to the teachings highlighted by the Examiner, '794 further discloses the requirement of an emulsion stabilizer being present in the emulsified fuel composition. The emulsion stabilizer is urea or formamide. In contrast Applicants claimed invention requires a stabilizer of the type defined by component (D) as disclosed in claim 1 i.e. a compound of the formula $K[G(NR_3)_y]^{y+} nX^{p-}$, wherein G is hydrogen, or an organic neutral radical of 1 to about 8 carbon atoms having a valence of y; each R independently is hydrogen or a hydrocarbyl group of 1 to about 10 carbon atoms; X^{p-} is an anion having a valence of p; and K, y, n and p are independently at least 1, provided that when G is H, y is 1; and further provided that the sum of the positive charge K^{y+} is equal to the sum of the negative charge np^- such that the amine salt is electrically neutral. Applicants claimed component (D) does not contain emulsion stabilizer is urea or formamide. Therefore '794 does not teach, suggest, or disclose the use of Applicants claimed emulsifier.

The Examiner contends '348 discloses carboxylic solubilizers/surfactant combinations and aqueous systems made from them. Further the Examiner contends that the solubilizers are made from acylating agents having hydrocarbyl substituents of about 12 to about 500 carbon atoms and N-(hydroxyl-substituted hydrocarbyl) amines. In addition to the acylating agents there may also be present one or more low molecular weight acylating agents containing 1 to less than 18 carbon atoms. Column 15, lines 28-32 discloses a fuel/water combination containing 0.2% to 25% solubilizer plus surfactant combination, about 2% to about 20% water with the balance being fuel and other conventional additives. In contrast Applicants claimed invention requires a component (D) as disclosed in claim 1. Component (D) is a compound of the formula: $K[G(NR_3)_y]^{y+} nX^{p-}$, wherein G is hydrogen, or an organic neutral radical of 1 to about 8 carbon atoms having a valence of y; each R independently is hydrogen or a hydrocarbyl group of 1 to about 10 carbon atoms; X^{p-} is an anion having a valence of p; and K, y, n and p are independently at least 1, provided that when G is H, y is 1; and further provided that the sum of the positive charge K^{y+} is equal to the sum of the negative charge np^- such that the amine salt is electrically neutral. Therefore the '348 patent does not teach, suggest, or disclose the use of Applicants claimed invention.

The Examiner contends that '938 discloses the addition of at least one fuel-soluble organic nitrate ignition improver to a water-in-oil emulsion. Preferred nitrate compounds include alkyl nitrates. In contrast Applicants claimed invention requires an emulsifier comprising an acylating agent as disclosed in claim 1; and the presence of component (D) as disclosed in claim 1. Component (D) as disclosed in claim 1 is a compound of the formula: $K[G(NR_3)_y]^{y+} nX^{p-}$, wherein G is hydrogen, or an organic neutral radical of 1 to about 8 carbon atoms having a valence of y; each R independently is hydrogen or a hydrocarbyl group of 1 to about 10 carbon atoms; X^{p-} is an anion having a valence of p; and K, y, n and p are independently at least 1, provided that when G is H, y is 1; and further provided that the sum of the positive charge K^{y+} is equal to the sum of the negative charge np^- such that the amine salt is electrically neutral. Therefore the '348 patent does not teach, suggest, or disclose the use of Applicants claimed invention.

With regard to a person skilled in the art combining the teachings of '794 and '348, any resulting emulsified fuel invention would contain (a) an emulsion stabilizer from urea and formamide present from 0.3 % to 0.7 %; (b) up to 20 % water; (c) 0.3% to 0.7 % ammonium nitrate; and (d) an emulsifier (i) a condensate of an alkylphenol and an alkyleneoxide; (ii) acylating agents having hydrocarbyl substituents of about 12 to about 500 carbon atoms; and (iii) N-(hydroxyl-substituted hydrocarbyl) amines. In addition to the acylating agents there may also be present one or more low molecular weight acylating agents containing 1 to less than 18 carbon atoms. Therefore the combination of '794 and '348 does not produce Applicants claimed invention because the combination of '794 and '348 produces an invention requiring (i) a condensate of an alkylphenol and an alkyleneoxide; and (ii) an emulsion stabilizer from urea and formamide present from 0.3 % to 0.7 %; and Applicants claimed invention does not contain either of these compounds.

With regard to a person skilled in the art combining the teachings of '794 and '938, any resulting emulsified fuel invention would contain (a) an emulsion stabilizer from urea and formamide present from 0.3 % to 0.7 %; (b) about 1 to about 40 volume percent water; (c) an organic nitrate ignition improver; and (d) an emulsifier (i) a condensate of an alkylphenol and an alkyleneoxide. Therefore the combination of '794 and '938 does not produce Applicants claimed invention because the combination of '794 and '938 produces an invention requiring (i) a condensate of an alkylphenol and an alkyleneoxide; and (ii) an emulsion stabilizer from urea and formamide present from 0.3 % to 0.7 %; and Applicants claimed invention does not contain either of these compounds. Therefore the combination of '794, '938 does not produce Applicants claimed invention.

With regard to a person skilled in the art combining the teachings of '794, '348 and '938, any resulting emulsified fuel invention would contain (a) an emulsion stabilizer from urea and formamide present from 0.3 % to 0.7 %; (b) about 1 to about 40 volume percent water; (c) an organic nitrate ignition improver; and (d) (i) a condensate of an alkylphenol and an alkyleneoxide; (ii) acylating agents having hydrocarbyl substituents of about 12 to about 500 carbon atoms; and (iii) N-(hydroxyl-substituted hydrocarbyl) amines. does not produce Applicants claimed

invention because the combination of '794, '348 and '938 produces an invention requiring (i) a condensate of an alkylphenol and an alkyleneoxide; and (ii) an emulsion stabilizer from urea and formamide present from 0.3 % to 0.7 %; and Applicants claimed invention does not contain either of these compounds. Therefore the combination of '794, '348 and '938 does not produce Applicants claimed invention.

For the reason set forth above, Applicants believe the present invention is novel and not obvious over the references used alone or in combination. Applicants respectfully request the Examiner to remove the 35 USC 103(a) rejection and find all claims allowable.

Claims 1-25 are rejected under judicially created doctrine of obviousness-type double patenting over claims 1-79 of Applicants US Patent 6,648,929 B1. Contemporaneously filed with this response is a Terminal Disclaimer in compliance with 37 C.F.R. 1.321(c) which overcomes a rejection on this ground.

The Examiner has rejected claims 4, 8, 11-14 and 21-24 under 35 U.S.C. 112 for a number of formal matters.

The Examiner has rejected claim 4 because (i) the definition of R in claim 1 is "is a hydrocarbyl group of about 30 to 500 carbon atoms," whereas in dependent claim 4 R "is a hydrocarbyl group of about 30 to about 500 carbon atoms." In view of the Examiners rejection Applicants have deleted the term "about" from the range 500 carbons. Accordingly the Examiners rejection should be withdrawn.

The Examiner has rejected claims 8 and 13 because they contain improper Markush groups. Applicants have amended claims 8 and 13 by deleting the term "selected from the group comprising" with the term "selected from the group consisting of." Accordingly the Examiners rejection should be withdrawn.

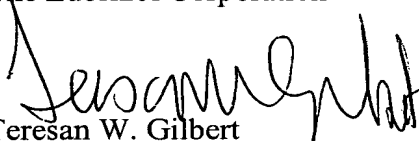
The Examiner has rejected dependent claim 14 (now limiting claim 1) because it fails to define all of the variables of the recited formula. Applicants have amended the language by changing the variable "g" to be "G"; "ky⁺" to be "K^{y+}"; and "k" to be "K." Accordingly the Examiners rejection should be withdrawn.

The Examiner has rejected dependent claims 21-24 because of indefinite terms "biodegradable resource" and "renewable resources." In view of the Examiners rejection Applicants have modified the term "biodegradable resource" to

be "biodegradable fuel." The basis for this amendment is given on page 7, lines 2-5, where the term biodegradable fuel is disclosed.

Applicants believe that no fee is required for the filing of this document. However, if any fees are due, the Commissioner is authorised to charge such fee to The Lubrizol Corporation Deposit Account No. 12-2275. A duplicate copy of this document is submitted for such purposes.

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